

REMARKS

Claims 1-8 are pending in the present application. By this Response, claims 1 and 7 are amended for clarification purposes. Claim 8 is added to recite the feature of a plurality of arrays of storage cells contained within a plurality of enclosures connected together to form a storage library system and a plurality of sets of guide rails running along the storage cells, wherein the plurality of sets of guide rails are interconnected within the plurality of enclosures to form an interconnected path through the library system that takes the robot out of the line of sight of the controller. Support for the newly added claim can be found at least on page 3, lines 15-20, page 12, line 8 - page 13, line 23 and in Figure 5 of the present specification. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 112, Second Paragraph

The Office Action rejects claims 1-7 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicants regard as the invention. This rejection is respectfully traversed.

In rejecting claims 1-7, the Office Action states:

In claims 1 and 7, the recitation that "the guide rail may form a complex path, including a path that ..." renders the claim scope unclear in that not only does it appear to be an optional limitation, but also appears to be an improper range within a range limitation.
Office Action dated February 2, 2004, page 2.

By this Response, claims 1 and 7 are amended to recite the feature of a guide rail forming a path that takes the robot out of the line of sight of the controller. Thus, the limitation is no longer optional since the phrase "may form" is removed from the claim language. Further, the phrase "complex path" is also removed from the claim language for clarification. Therefore the rejection of claims 1-7 under 35 U.S.C. § 112, second paragraph is overcome.

II. 35 U.S.C. § 102, Alleged Anticipation of Claims 1-3 and 5-7

The Office Action rejects claims 1-3 and 5-7 under 35 U.S.C. § 102(e) as being allegedly anticipated by Canaday et al. (U.S. Patent No. 6,668,991). This rejection is respectfully traversed.

With regard to claims 1-3 and 5-7, the Office Action states:

Canaday et al show a media storage library of the type set forth in the claims, including multiple library modules (enclosures), storage cell arrays, multiple robots, and multiple guide rails, wherein the power and control signals are sent to the robots through the guide rails in an exclusive and uninterrupted fashion, and wherein the guide rails may form complex paths.

Office Action dated February 2, 2004, page 3.

Claim 1, which is representative of claim 7 with regard to similarly recited subject matter, reads as follows:

1. A storage library, comprising:
 - at least one array of storage cells;
 - at least one guide rail running along the storage cells;
 - at least one robot coupled to the guide rail, wherein the robot moves along the guide rail and can manipulate objects within the storage cells;
 - at least one power source that supplies power to the robot; and
 - at least one controller that controls the movement of the robot;
 - wherein the robot receives uninterrupted power and control signals from the power source and controller directly through the guide rail, exclusive of other components in the library;
 - wherein the guide rail forms a path that takes the robot out of the line of sight of the controller, while maintaining uninterrupted power and control signals to the robot. (emphasis added)

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when

determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). Applicants respectively submit that Canaday does not identically show every element of the claimed invention arranged as they are in the claims. Specifically, Canaday does not disclose that the guide rail forms a path that takes the robot out of the line of sight of the controller. Furthermore, the Office Action fails to even mention this feature in rejecting claims 1-3 and 5-7.

Canaday is directed to a media storage library containing robots for retrieving media cartridges. In Canaday, power is distributed to the robots through the guide rails. In addition, the control signals to control the picker robots are modulated onto the guide rails and filtered out at the robot. The robot has a set of brushes/wipers that conducts the power and control signals from the guide rails.

While Canaday may teach a media storage library that may comprise a plurality of enclosures connected in a modular fashion, wherein the power and control signals are provided to the robot through the guide rails, there is nothing in Canaday that teaches or suggests that the guide rail forms a path that takes the robot out of the line of sight of the controller. Canaday discloses nothing about possible enclosure and guide rail configurations. Rather, Canaday merely states that libraries can be connected in a modular fashion in column 1, lines 49-55, which reads as follows:

The integration of such conductive strips or rails into the automated tape cartridge library, in conjunction with brush or wheel contacts provided on the robotic devices, allows for greater freedom of movement of the robotic devices, as well as for modular and extensible power distribution to robotic devices as library configurations change, or as libraries are connected in a modular fashion to form library systems.

While Canaday teaches that libraries can be configured in a modular fashion, Canaday does not clarify what is meant by the phrase "modular fashion" nor does Canaday teach, suggest or even allude to any sort of library or guide rail configurations that take the robot out of the line of sight of the controller. Thus, Canaday may configure

libraries in such a manner as to align the libraries with one another, thereby forming a path of guide rails which keeps the picker robot within line of sight of the controller. Thus, nowhere in Canaday is it taught that a guide rail or guide rails form a path that takes a robot out of the line of sight of the controller.

In view of the above, Applicants respectfully submit that Canaday does not teach each and every feature claims 1 and 7 as required under 35 U.S.C. § 102(e). At least by virtue of their dependency on claim 1, Canaday does not teach each and every feature of dependent claims 2-6. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-7 under 35 U.S.C. § 102(e).

III. 35 U.S.C. § 103, Alleged Obviousness of Claims 1-7

The Office Action rejects claims 1-7 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Luffel et al. (U.S. Patent No. 6,222,699) in view of Benson et al. (U.S. Patent No. 5,241,380). This rejection is respectfully traversed.

With regard to claims 1-7, the Office Action states:

Luffel et al show a modular media storage library essentially as claimed, including robots which receive exclusive and uninterrupted power through guide rails which form a complex path; however, control of the robots is handled by a wireless control module rather than through the rails.

Benson et al teach that it is desirable in an environment wherein an automated robotic vehicle runs along rails to send power and control signals through the rails. This is explicitly disclosed as an advantage over wireless communication systems. Note that the robot vehicle could include arms or other work elements, and that the rails may have different configurations.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Luffel et al by utilizing the rails to send control signals to the robots, as shown by Benson et al, as this would be simpler, cheaper, and more reliable than a wireless system.

Office Action dated February 2, 2004, pages 3-4.

Luffel is directed to a media storage library comprising a plurality of modular units stacked vertically on top of one another to form a plurality of levels of modular units. A power modul supplies power to the tracks to power the cartridge access device.

Control signals are provided wirelessly to the cartridge access device. Luffell is concerned with the ability to expand a library system by stacking modular units to form an expanded media library. While Luffell may teach a media storage library containing media cartridges, a cartridge access device to access the cartridges and even providing power to the tracks to power the cartridge access device, Luffell does not teach or suggest providing control signals from a controller directly through the guide rail. To the contrary, Luffell teaches controlling the cartridge access device with a wireless communications link. Further, the Office Action admits that Luffell does not teach this feature. However, the Office Action alleges that this feature is taught in Benson. Applicants respectfully disagree and direct the Examiner's attention to column 2, lines 8-22 in Benson, which reads as follows:

The present invention provides an improved track mounted remote control actuator system, particularly adapted for surveillance of a large area. The system includes a track positioned along a selected path and a moveable carriage supported by the track. A pair of electrical conductors mounted adjacent and parallel to the track provide power to a drive assembly mounted on the carriage. Video cameras are mounted to the carriage for monitoring selected regions adjacent to the path. Output signals from the cameras are transmitted on the conductors to a remote monitoring location.

In the preferred embodiment, control signals for controlling placement of the carriage along the track are also transmitted on the conductors to the carriage. (emphasis added)

Thus, in Benson, video cameras are mounted on a carriage. The carriage is supported by the track system on which it traverses. Power and control signals are modulated onto a pair of conductors mounted adjacent and parallel to the tracks. In addition, Figure 5, as well as the corresponding text beginning at column 4 line 47 of Benson clearly shows that the pair of conductors and the track are two separate and distinct entities. Specifically, Figure 5 depicts a track 90 with a pair of conductors 92 mounted adjacent and parallel to the track. The carriage makes contact with this pair of conductors to receive power and control signals. Thus, Benson does not teach or suggest providing power and control signals from a controller directly through the guide rail.

Furthermore, one of ordinary skill in the art would not even look to Benson to solve the problems addressed in the present invention. The present invention is concerned with powering and controlling a robot in a media storage library. Benson, on the other hand, is concerned with a surveillance system that receives its power and control signals from a pair of conductors mounted to the track. Even if both the power and control signals were applied directly to the track, which they are not, one of ordinary skill in the art still would not look to Benson. This is because Benson is directed to a completely different system than the present invention. It would be no more obvious for one of ordinary skill in the art to look to Benson than to look at an invention for an electric toy train, for example which also receives its power and control signals from a track. This is clearly a facetious argument to re-enforce the point that one of ordinary skill would not look to Benson, which is directed to an entirely different problem, merely because the carriage traverses a track.

Moreover, one of ordinary skill in the art, presented with only Luffel and Benson, and without prior knowledge of the Applicants claimed invention, would not have found it obvious to combine media storage library such as that in Luffel with a surveillance system as in Benson. Even if one were somehow motivated to combine these references, one would still not be motivated to modify the resulting combination to provide control signals from a controller directly through the guide rail. Thus, the alleged combination can only be the result of impermissible hindsight reconstruction using Applicants' own disclosure as a guide. While Applicants understand that all examination entails some measure of hindsight, when the rejection is based completely on hindsight, as in the present case, to the exclusion of what can be gleaned from the references, then the rejection is improper and should be withdrawn.

In view of the above, Applicants submit that neither Luffel nor Benson, either alone or in combination teaches or suggests each and every feature of independent claims 1 and 7. At least by virtue of their dependency on claim 1, neither Luffel nor Benson, either alone or in combination, teaches or suggests each and every feature of dependent claims 2-6. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-7 under 35 U.S.C. § 103(a).

IV. New Claim 8

New claim 8 is added to the application by this Response. Claim 8 is patentable over Canaday, Luffel and Benson at least by virtue of its dependency on claim 1. Further, claim 8 includes additional features not shown or suggested by Canaday, Luffel or Benson. For example, claim 8 recites the features of a plurality of arrays of storage cells contained within a plurality of enclosures connected together to form a storage library system and a plurality of sets of guide rails running along the storage cells, wherein the plurality of sets of guide rails are interconnected within the plurality of enclosures to form an interconnected path through the library system that takes the robot out of the line of sight of the controller. Support for the newly added features of claim 8 is found at least on page 3, lines 15-20, page 12, line 8 – page 13, line 23 and in Figure 5 of the present specification. Thus, it is respectfully submitted that claim 8 is allowable over the art of record.

V. Conclusion

It is respectfully urged that the subject application is patentable over Canaday, Luffel and Benson and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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